

and not more than 1,590 N occurring between 12.2 ms and 17.0 ms from time zero.

[71 FR 75331, Dec. 14, 2006, as amended at 73 FR 33921, June 16, 2008]

§ 572.189 Instrumentation and test conditions.

(a) The test probe for lateral shoulder, thorax without arm, abdomen, and pelvis impact tests is the same as that specified in § 572.36(a) and the impact probe has a minimum mass moment of inertia in yaw of 9,000 kg-cm², a free air resonant frequency not less than 1,000 Hz and the probe's end opposite to the impact face has provisions to mount an accelerometer with its sensitive axis collinear with the longitudinal axis of the probe. All hardware attached directly to the impactor and one-third (1/3) of the mass of the suspension cables must be included in the calculations of the total impactor mass. The sum mass of the attachments and 1/3 cable mass must not exceed 5 percent of the total pendulum mass. No suspension hardware, suspension cables, or any other attachments to the test probe, including velocity vane, shall make contact with the dummy during the test.

(b) Accelerometers for the head, the thoracic spine, and the pelvis conform to specifications of SA572-S4.

(c) Rotary potentiometer for the neck and lumbar spine certification tests conforms to SA572-53.

(d) Linear position transducer for the thoracic rib conforms to SA572-S69.

(e) Load sensors for the abdomen conform to specifications of SA572-S75.

(f) Load sensor for the pubic symphysis conforms to specifications of SA572-77.

(g) Load sensor for the lumbar spine conforms to specifications of SA572-76.

(h) Instrumentation and sensors conform to the Recommended Practice SAE J-211 (Mar. 1995)—Instrumentation for Impact Test unless noted otherwise.

(i) All instrumented response signal measurements shall be treated to the following specifications:

(1) Head acceleration—Digitally filtered CFC 1000;

(2) Neck and lumbar spine rotations—Digitally filtered CFC 180;

(3) Neck and lumbar spine pendulum accelerations—Digitally filtered CFC 60;

(4) Pelvis, shoulder, thorax without arm, and abdomen impactor accelerations—Digitally filtered CFC 180;

(5) Abdominal and pubic symphysis force—Digitally filtered at CFC 600;

(6) Thorax deflection—Digitally filtered CFC 180.

(j)(1) Filter the pendulum acceleration data using a SAE J211 CFC 60 filter.

(2) Determine the time when the filtered pendulum accelerometer data first crosses the -10 g level (T_{10}).

(3) Calculate time-zero: $T_0 = T_{10} - T_m$.

Where:

$T_m = 1.417$ ms for the Neck Test
 $= 1.588$ ms for the Lumbar Spine Test

(4) Set the data time-zero to the sample number nearest to the calculated T_0 .

(k)(1) Filter the pendulum acceleration data using a SAE J211 CFC 180 filter.

(2) Determine the time when the filtered pendulum accelerometer data first crosses the -1.0 m/s² (-.102 g) acceleration level (T_0).

(3) Set the data time-zero to the sample number of the new T_0 .

(l) Mountings for the head, spine and pelvis accelerometers shall have no resonance frequency within a range of 3 times the frequency range of the applicable channel class.

(m) Limb joints of the test dummy are set at the force between 1 to 2 G's, which just supports the limb's weight when the limbs are extended horizontally forward. The force required to move a limb segment does not exceed 2 G's throughout the range of the limb motion.

(n) Performance tests are conducted, unless specified otherwise, at any temperature from 20.6 to 22.2 degrees C. (69 to 72 degrees F.) and at any relative humidity from 10 percent to 70 percent after exposure of the dummy to those conditions for a period of not less than 4 hours.

(o) Certification tests of the same component, segment, assembly, or fully assembled dummy shall be separated in time by a period of not less than thirty (30) minutes unless otherwise specified.

APPENDIX A TO SUBPART U OF PART 572—FIGURES

Figure U1

NECK/LUMBAR SPINE ATTACHED TO HEADFORM

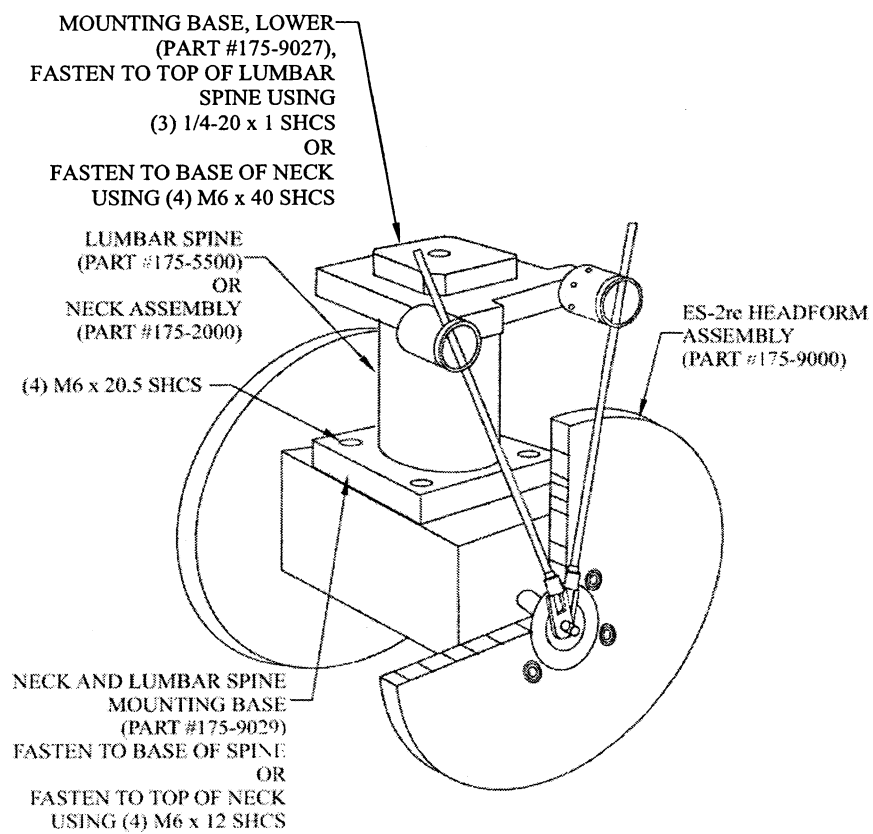


Figure U2-A

NECK/LUMBAR SPINE/HEADFORM ATTACHED TO PENDULUM

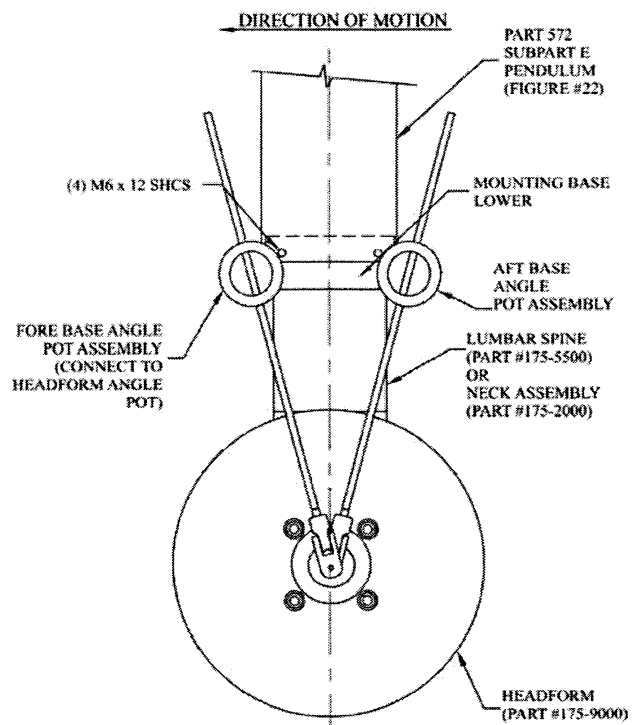


Figure U2-B
ANGLE MEASUREMENTS WITH HEADFORM SET-UP

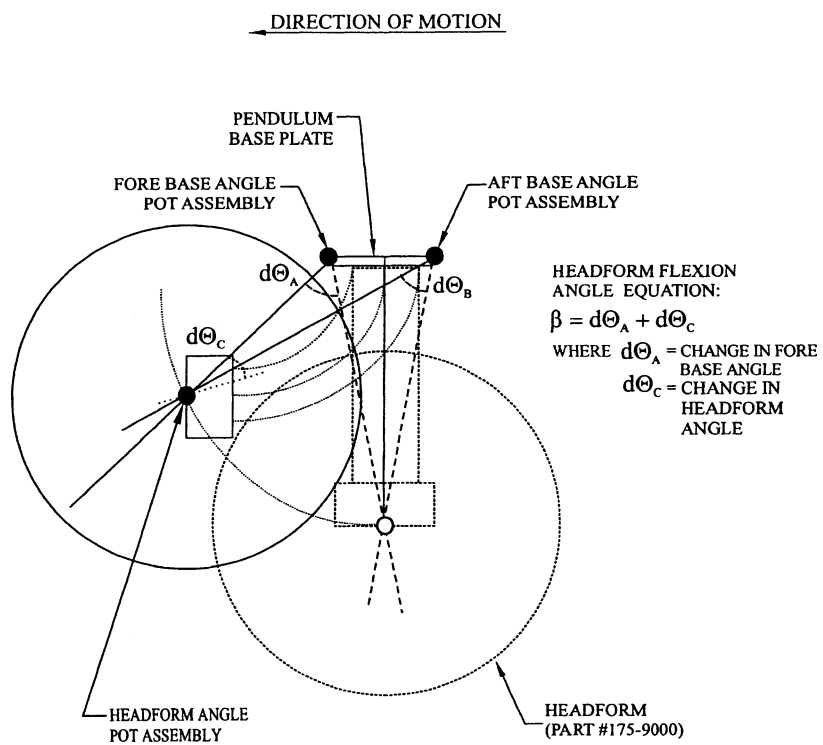


Figure U3
SHOULDER IMPACT

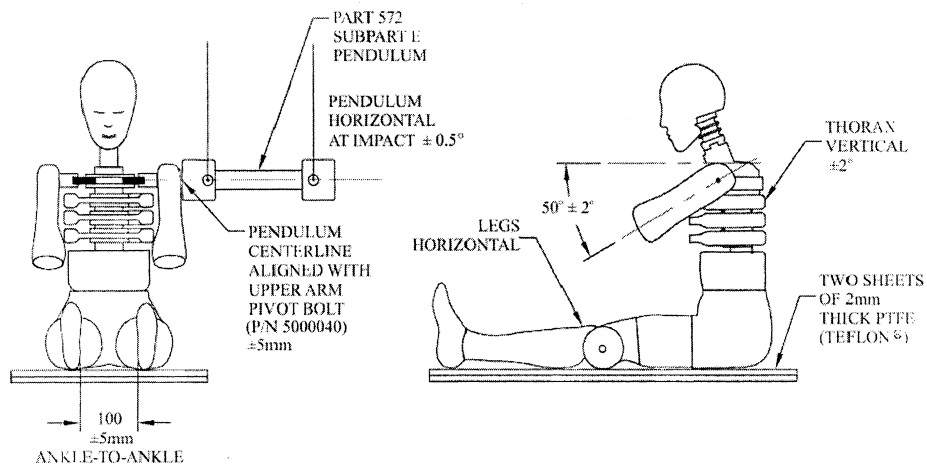


Figure U4
THORAX IMPACT

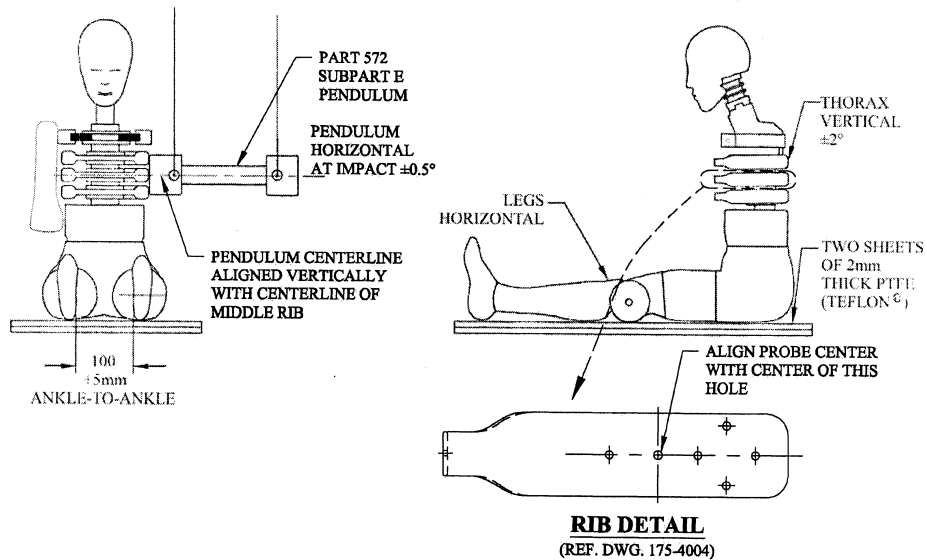


Figure U5
ABDOMEN IMPACT

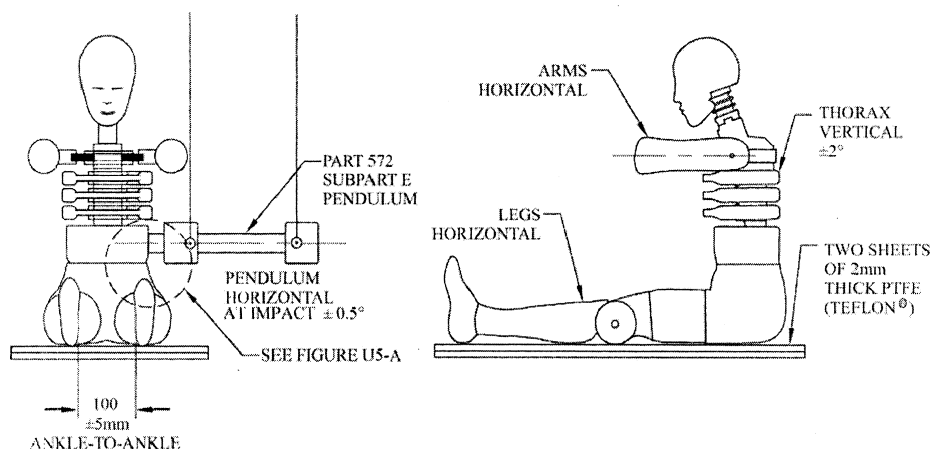


Figure U5-A
ABDOMEN IMPACT - VIEW A

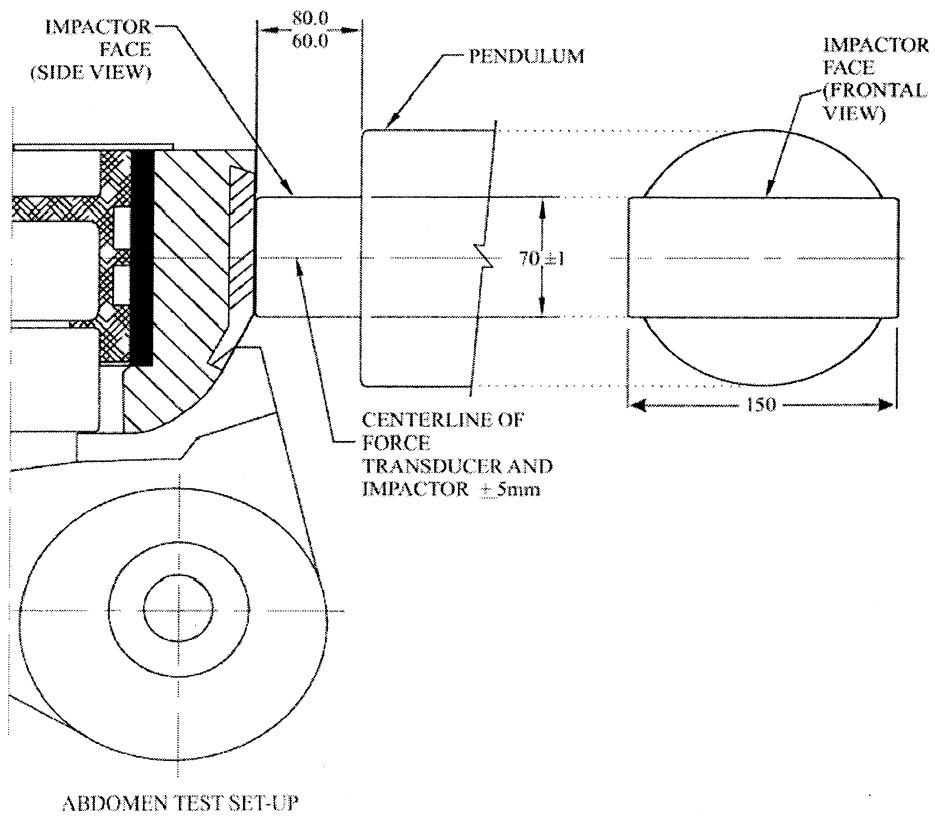


Figure U6
PELVIS IMPACT

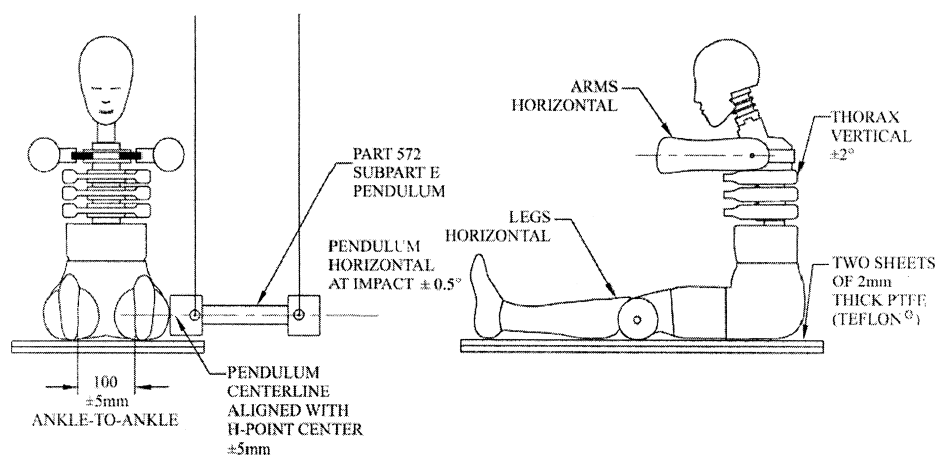
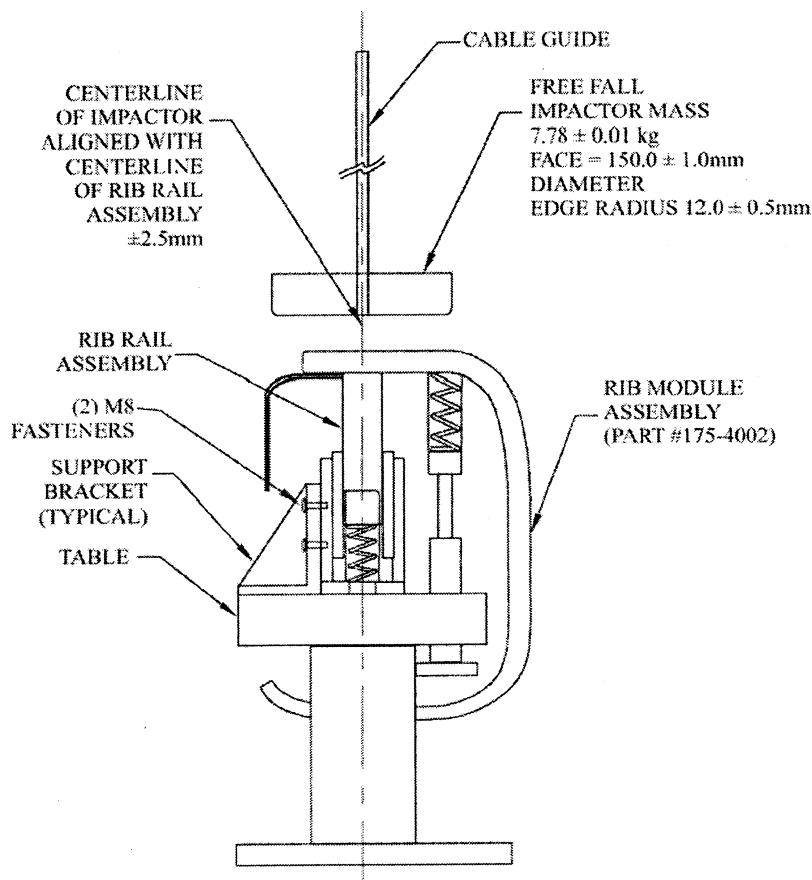


Figure U7
RIB DROP TEST



[71 FR 75331, Dec. 14, 2006, as amended at 73 FR 33921, June 16, 2008]

Subpart V, SID-IIsD Side Impact Crash Test Dummy, Small Adult Female

SOURCE: 71 FR 75370, Dec. 14, 2006, unless otherwise noted.

§ 572.190 Incorporated materials.

(a) The following materials are hereby incorporated into this Subpart by reference:

(1) A parts/drawing list entitled, "Parts/Drawings List, Part 572 Subpart V, SID-IIsD, July 1, 2008,"

(2) A drawings and inspection package entitled "Drawings and Specifications for the SID-IIsD Small Female Crash Test Dummy, Part 572 Subpart V, July 1, 2008," consisting of:

- (i) Drawing No. 180-0000, SID-IIsD Complete Assembly;
- (ii) Drawing No. 180-1000, 6 Axis Head Assembly;
- (iii) Drawing No. 180-2000, Neck Assembly;